

## What is Claimed is:

1. An apparatus for manufacturing fiberglass-reinforced panels, comprising:
  - a plurality of molds for receiving the components of the panels;
  - a spraying apparatus for applying an exterior coat for said panels;
  - an applicator mechanism for applying resin and fiberglass to said panels;
  - a guide mechanism for guiding the molds through said spraying apparatus and applicator mechanism; and
  - a drive mechanism for independently driving individuals ones of said plurality of molds.
2. The apparatus of claim 1, wherein drive mechanism is comprised of a plurality of drive rollers.
3. The apparatus of claim 2, wherein said molds each comprise an elongate support surface, having an upper finished surface, and a lower sub-frame, said lower sub-frame including a horizontally projecting, longitudinally extending drive surface, whereby said drive rollers engage said drive surface.
4. The apparatus of claim 3, wherein said lower sub-frame includes at least one longitudinally extending I-beam, and said lower drive surface is provided by a lower surface thereof.
5. The apparatus of claim 4, wherein said drive rollers are motor driven.
6. The apparatus of claim 5, wherein said drive rollers are driven by variable speed motors.
7. The apparatus of claim 6, wherein each said variable speed motor is individually controllable.
8. The apparatus of claim 1, wherein said guide mechanism is comprised of a plurality of guide rollers.

9. The apparatus of claim 8, wherein said guide rollers comprise a first plurality of rollers, each having a rotational axis along a horizontal axis, to guide said molds in a horizontal sense.

10. The apparatus of claim 9, wherein said molds each comprise an elongate support surface, having an upper finished surface, and a lower sub-frame, said lower sub-frame including horizontally projecting, longitudinally extending first reference surfaces, whereby said first plurality of rollers engage said first reference surfaces.

11. The apparatus of claim 10, wherein said guide rollers further comprise a second plurality of rollers, each having a rotational axis along a vertical axis, to guide said molds in a lateral sense.

12. The apparatus of claim 11, wherein said molds further comprise vertically projecting, longitudinally extending second reference surfaces, whereby said second plurality of rollers engage said second reference surfaces.

13. The apparatus of claim 12, wherein said lower sub-frame comprises I-beam members extending longitudinally below said elongate support surface and adjacent to lateral side edges thereof, said first reference surface being defined by a lower section of said I-beam, and said second reference surfaces being defined by exterior channels formed by said I-beams.

14. The apparatus of claim 13, wherein said lower sub-frame further includes a longitudinally extending central I-beam, and a lower surface of said central I-beam provides a drive surface.

15. The apparatus of claim 14, wherein said drive mechanism is comprised of drive rollers positioned beneath said central I-beam, drivingly engaging said drive surface.

16. The apparatus of claim 1, wherein said spraying apparatus flanks said guide mechanism, whereby said molds are driven relative to, and through, said spraying apparatus.

17. The apparatus of claim 16, further comprising an enclosure surrounding said spraying apparatus.

18. The apparatus of claim 17, wherein said enclosure further includes a ventilation system to vent fumes within said enclosure.

19. The apparatus of claim 17, further comprising a longitudinally extending oven, extending from said enclosure, whereby said molds, after passing through said spraying apparatus, are driven through said oven.

20. An apparatus for manufacturing fiberglass-reinforced panel, comprising:  
a plurality of molds for receiving the components of the panels;  
a spraying apparatus for applying an exterior coat for said panels;  
an applicator mechanism for applying resin and fiberglass to said panels;  
a guide mechanism for guiding the molds through said spraying apparatus and applicator mechanism; and  
an enclosure surrounding said spraying apparatus and applicator mechanism.

21. The apparatus of claim 20, wherein said enclosure further includes a ventilation system to vent fumes within said enclosure.

22. The apparatus of claim 21, wherein said enclosure is defined as a curing oven intermediate said spraying apparatus and applicator mechanism.

23. The apparatus of claim 20, further comprising an operator viewing station, for viewing moving molds within said enclosure, from a position exterior of said enclosure.

24. The apparatus of claim 20, further comprising an operator enclosed area, downstream of said applicator mechanism.

25. The apparatus of claim 24, wherein said operator enclosed area is down-drafted to improve the air quality within the operator enclosed area.

26. The apparatus of claim 20, further comprising a drive mechanism comprised of a plurality of drive rollers, to drive individual molds through said enclosure.

27. The apparatus of claim 26, wherein said molds each comprise an elongate support surface, having an upper finished surface, and a lower sub-frame, said lower sub-frame including a horizontally projecting, longitudinally extending drive surface, whereby said drive rollers engage said drive surface.

28. The apparatus of claim 27, wherein said lower sub-frame includes at least one longitudinally extending I-beam, and said lower drive surface is provided by a lower surface thereof.

29. The apparatus of claim 26, wherein said drive rollers are motor driven.

30. The apparatus of claim 29, wherein said drive rollers are driven by variable speed motors.

31. The apparatus of claim 30, wherein each said variable speed motor is individually controllable.

32. The apparatus of claim 20, wherein said guide mechanism is comprised of a plurality of guide rollers.

33. The apparatus of claim 32, wherein said guide rollers comprise a first plurality of rollers, each having a rotational axis along a horizontal axis, to guide said molds in a horizontal sense.

34. The apparatus of claim 33, wherein said guide rollers further comprise a second plurality of rollers, each having a rotational axis along a vertical axis, to guide said molds in a lateral sense.

35. The apparatus of claim 34, wherein said molds each comprise an elongate support surface, having an upper finished surface, and a lower sub-frame comprised of an I-beam structure, comprising I-beam members extending longitudinally below said elongate support surface and adjacent to lateral side edges thereof, whereby said first plurality of rollers are profiled to contact a lower section of said I-beam, and said second plurality of rollers flank said I-beams, with rollers positioned within and engaging, exterior channels formed by said I-beams.

36. The apparatus of claim 35, wherein said lower sub-frame further includes a longitudinally extending central I-beam, and a lower surface of said central I-beam provides a drive surface.

37. The apparatus of claim 36, further comprising a drive mechanism comprised of drive rollers positioned beneath said central I-beam, drivingly engaging said drive surface.

38. A method of manufacturing fiberglass-reinforced panel, comprising the steps of:  
providing a mold having an upper finished surface;  
moving each said mold individually along a longitudinal path;  
spraying said moving mold with a coating;  
at least partially curing said coating;  
applying a resin and fiberglass to said coating;  
applying stiffener boards on top of said resin; and  
applying a vacuum to said molds to complete said reinforced panels.

39. The method of claim 38, wherein said spraying step is done in an enclosed booth.

40. The method of claim 39, further comprising the step of ventilating said spraying booth.

41. The method of claim 39, wherein said coating is cured within a heated and enclosed curing chamber which extends continuously from said enclosed booth.

42. The method of claim 38, wherein said molds are individually moved by way of a drive roller which engages said mold to drive said mold longitudinally.

43. An apparatus for manufacturing fiberglass reinforced panels, comprising:  
a plurality of individual molds for receiving the components of the panels;  
a first longitudinal process line including a spraying apparatus for applying an exterior coat for said panels, and applicator mechanisms for applying resin and fiberglass strands to said panels;  
a second longitudinal process line operating parallel to, but in an opposite direction to, said first longitudinal process line,  
a first transverse transfer station transversely connecting an end of said first longitudinal process line with a starting position of said second longitudinal process line.

44. The apparatus of claim 43, further comprising a second transverse transfer station transversely connecting an end of said second longitudinal process line with a starting position of said first longitudinal process line.

45. The apparatus of claim 43, wherein said first longitudinal process line includes a guide mechanism for guiding said individual molds through said spraying apparatus and applicator mechanisms.

46. The apparatus of claim 45, wherein said guide mechanism is comprised of a plurality of guide rollers.

47. The apparatus of claim 46, wherein said guide rollers comprise a first plurality of rollers, each having a rotational axis along a horizontal axis, to guide said molds in a horizontal sense.

48. The apparatus of claim 47, wherein said molds each comprise an elongate support surface, having an upper finished surface, and a lower sub-frame, said lower sub-frame including horizontally projecting, longitudinally extending first reference surfaces, whereby said first plurality of rollers engage said first reference surfaces.

49. The apparatus of claim 48, wherein said guide rollers further comprise a second plurality of rollers, each having a rotational axis along a vertical axis, to guide said molds in a lateral sense.
50. The apparatus of claim 49, wherein said molds further comprise vertically projecting, longitudinally extending second reference surfaces, whereby said second plurality of rollers engage said second reference surfaces.
51. The apparatus of claim 50, wherein said first transverse transfer station includes a movable trolley, whereby said trolley has an upper roller assembly, comprised of a third plurality of rollers substantially identical to the first plurality of rollers, and a fourth plurality of rollers, substantially identical to said second plurality of rollers, whereby said trolley may be laterally aligned with said first longitudinal process line, with said first and third plurality of rollers aligned, and said second and fourth plurality of rollers aligned, and said individual molds may be moved from said first longitudinal process line directly to said trolley, and thereafter transferred to said second longitudinal process line.
52. The apparatus of claim 51, further comprising a first drive mechanism to drive said individual molds along said first longitudinal process line.
53. The apparatus of claim 52, further comprising a second drive mechanism to drive said trolley between said first and second longitudinal process lines.
54. The apparatus of claim 53, wherein said second longitudinal process line includes a fifth and sixth plurality of rollers, substantially identical to said first and second plurality of rollers, whereby said trolley may be laterally aligned with said second longitudinal process line, with said third and fifth plurality of rollers aligned, and said fourth and sixth plurality of rollers aligned, and said individual molds may be moved directly from said trolley to said second longitudinal process line.
55. The apparatus of claim 54, further comprising a third drive mechanism to drive said individual molds along said second longitudinal process line.